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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/245,549 | 02/05/1999 | ANTONIS ZERVOS | 10287/039001 | 5009 |

7590

07/18/2002

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EXAMINER

TUNG, JOYCE

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1637

DATE MAILED: 07/18/2002

21

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/245,549

Applicant(s)

ZERVOS, ANTONIS

Examiner

Joyce Tung

Art Unit

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Detailed Action*.

Art Unit: 1637

Response to Amendment

The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1637.

1. The amendment filed 4/22/2002 has been entered.
2. The rejections of claims 2-6 and 26 under 35 U.S.C. §112, second paragraph are withdrawn because of the amendment.
3. The reactions of claims 1-27 under 35 U.S.C. §103(a) respectively over Minshull et al., in view of Fraser et al. and Liu et al. are withdrawn because of the argument.

New Grounds of Rejections

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

Art Unit: 1637

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 3-12, and 15-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Passmore et al. (5,976,846).

As to the limitations of claims 1, 3-12, 15-27, Passmore et al. disclose a method of in vivo cloning with multifragment. The method involves polymerase chain reaction to generate a series of double-stranded DNA fragments. Each fragment contains a region homologous to a portion of the fragment to which it is to be joined. These homologous regions undergo recombination in vivo following transformation into a host with efficient and precise homologous recombination, such as the yeast. The invention also includes kits containing reagents for conducting the method (See the Abstract, fig. 4, fig 6B, column 6, lines 16-67 and column 7, lines 1-16, column 8, lines 33-67). Passmore et al. also disclose two hybrid screening system (See column 21, lines 27-43) in which the teachings of Passmore et al. are inherent that the limitations of claims 23-26 are suggested.

Passmore et al. disclose that the cloning method is based on the ability to create a series of overlapping DNA fragments by introducing at one end of each DNA fragment a sequence element homologous to the next DNA fragment in the series (See fig. 1). Nevertheless, the final DNA fragments to be inserted into vectors have one end of the DNA fragments which is homologous to one end of the vector and another end of the DNA fragments which is

Art Unit: 1637

homologous to another end of the vector (See fig 4) and then in vivo homologous recombination is taken place. Thus, the teachings of Passmore et al. suggest some limitations in claims 1, 3 and 26 that the DNA insert molecule has a first common region which is homologous with the first region of the vector molecule, a second common region which is homologous with the second region of the vector and a library element encoding region disposed between the two common regions.

Therefore, one of ordinary skill in the art at the time of the instant invention would have been motivated to apply the method of Passmore et al. to make the instant invention with a reasonable expectation of success because the method of Passmore et al. is superior to previous methods in which it does not require the use of any specific DNA restriction or modification enzyme in vitro, other than those in the PCR process, can be used to recombine mutations present on separate DNA inserts into a single new insert, carried on a cloning vector (See column 3, lines 31-34 and lines 41-47). The method of Passmore et al. also can be used to construct vector that stably transform yeast (See column 3, lines 54-67) (as recited in claim 7). It would have prima facie obvious to carry out the method as claimed.

6. Claims 13-14 are under 35 U.S.C. 103(a) as being unpatentable over Passmore et al. (5,976,846) as applied to claims 1, 3-12, and 15-27 above, and further in view of Fraser et al. (4,870,023).

The teachings of Passmore et al. are set forth in section 5 above and Passmore et al. do not disclose using an adapter to ligate the nucleic acid insert molecule in which the adapter has a

Art Unit: 1637

sequence homologous to the first and second region of the vector respectively as recited in claims 13 and 14.

As to the limitations of claims 13-14 which further limits to claim 1, Fraser et al. disclose the invention directed to recombination of baculoviruses which encode fusion polyhedrin protein (See the Abstract). The gene can be expressed via homologous recombination in vivo with a parent vector (See column 9, lines 25-30). The method involves using a linker which ligates the polyhedrin DNA into a cloning vector (See column 17, lines 9-14). The linker of Fraser et al. has the same function as the adapter claimed in instant claims 13-14.

One of ordinary skill in the art at the time of the instant invention would have been motivated to apply the teachings of the references Fraser et al. to the method of Passmore et al. with a reasonable expectation of success because the method of Fraser et al. is related to vector/host system which can direct the expression recombinant gene in different hosts (See column 8, lines 10-14) and thus the method is useful for express vector. It would have been prima facie obvious to carry out the method as claimed.

7. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Joyce Tung whose telephone number is (703) 305-7112. The examiner can normally be reached on Monday-Friday from 8:00 AM-4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached at (703) 308-1119 on Monday-Friday from 10:00 AM-6:00 PM.


Art Unit: 1637

Any inquiries of a general nature or relating to the status of this application should be directed to the Chemical/Matrix receptionist whose telephone number is (703) 308-0196.

8. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Art Unit 1637 via the PTO Fax Center located in Crystal Mall 1 using (703) 305-3014 or 308-4242. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989).

Joyce Tung

July 11, 2002


GARY BENZION, PH.D.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600